In the Claims

1.-15. (Cancelled)

16. (Previously Presented) A digital subscriber line (xDSL) communications device comprising:

a selector located in a housing;

an attenuation device located in the housing and coupled to the selector, the attenuation device comprising:

a resistive circuit having a first end and a second end; and

a plurality of capacitive circuits coupled in series between the first end of the resistive circuit and the selector, the capacitive circuits comprising a plurality of resistive elements coupled in parallel to a plurality of capacitive elements, the capacitive circuits operable to permit normal operation of telephone services at a subscriber premises;

a bi-directional variable gain amplifier located in the housing and coupled to the selector and the second end of the resistive circuit;

a gain control circuit located in the housing and coupled to the amplifier;

a processor located in the housing and coupled to the gain control circuit and the amplifier;

a line interface coupled to the selector and the capacitive circuits, the interface operable to communicate over a twisted pair line;

wherein the processor is operable to

train the xDSL communications device at a data transmission rate;

receive a measured signal strength from the gain control circuit of a data signal received from a remote location using the twisted pair line after the xDSL communications device trains;

calculate an amplification for the data signal based on the measured signal strength; and

communicate the calculated amplification to the gain control circuit, the gain control circuit operable to adjust the gain of the amplifier; and

wherein the gain control circuit adjusts the gain of the amplifier by

increasing the gain of the amplifier if the measured signal strength is below a first value;

decreasing the gain of the amplifier if the measured signal strength is above the first value and below a second value; and

eliminating the gain of the amplifier if the measured signal strength is above the second value.

17. (Cancelled)

18. (Cancelled)

19. (Original) The communications device of Claim 16, wherein the capacitive circuits are further operable to filter out telephone signals received from a remote location over the twisted pair line.

20. (Original) The communications device of Claim 16, wherein the capacitive circuits are further operable to:

filter out telephone signals received from a remote location over the twisted pair line; and

provide a decreasing amount of attenuation for data signals in a transmit frequency band as frequency of the data signals increases.

21. (Original) The communications device of Claim 16, wherein the capacitive circuits are further operable to:

filter out telephone signals received from a remote location over the twisted pair line

provide a decreasing amount of attenuation for data signals in a transmit frequency band as frequency of the data signals increases; and

provide a substantially consistent amount of attenuation for data signals in a receive frequency band.

22. (Original) The communications device of Claim 21, wherein:

the telephone signals have a frequency approximately below 4 KH_z;

the data signals in the transmit frequency band have a frequency approximately between 25 KH_z and 270 KH_z; and

the data signals in the receive frequency band have a frequency approximately between 270 KH_z and 1 MH_z.

23. (Original) The communications device of Claim 16, wherein the resistive circuit comprises an H-pad attenuator.

24. (Original) The communications device of Claim 16, wherein the resistive circuit is operable to model a length of twisted pair line between a subscriber premises and a remote location.

25. (Original) The communications device of Claim 16, further comprising a plurality of attenuation devices coupled to the selector, each device operable to model a different length of twisted pair line between the subscriber premises and the remote location.

26. (Original) The communications device of Claim 25, wherein the selector is operable to select one of the plurality of attenuation devices.

27. (Currently Amended) A method for improving the performance of an xDSL modem located at a subscriber premises, the method comprising:

filtering out telephone signals received from a remote location over a twisted pair line;

receiving first data signals in a transmit frequency band from the xDSL modem and second data signals in a receive frequency band from the remote location through capacitive coupling; [[and]]

attenuating the first data signals in the transmit frequency band and the second data signals in the receive frequency band with a resistive circuit, the amount of attenuation decreasing as frequency increases for the first data signals in the transmit frequency band and the amount of attenuation remaining substantially consistent for the second data signals in the receive frequency band;

measuring a strength of one of the first data signals in the transmit frequency band or one of the second data signals in the receive frequency band with a gain control circuit located in the xDSL modem;

calculating an appropriate amount of attenuation based on the measured signal strength with a processor;

adjusting a gain of the transmit or receive amplifiers based on the calculated amplification using the gain control circuit, the step of adjusting the gain of the transmit and receive amplifier based on the calculated amplification comprising:

increasing the gain of the transmit and receive amplifiers if the measured signal strength is below a first level;

decreasing the gain of the transmit and receive amplifiers if the measured signal strength is above the first level and below a second level; and

eliminating the gain of the transmit and receive amplifiers if the measured signal strength is above the second level.

28. (Original) The method of Claim 27, wherein the step of attenuating the first data signals in the transmit frequency band and the second data signals in the receive frequency band with the resistive circuit comprises increasing the effective distance between the xDSL modem and the remote location by modeling a length of twisted pair line.

29. (Original) The method of Claim 27, wherein:

the telephone signals have a frequency approximately below 4 KH_z;

the data signals in the transmit frequency band have a frequency approximately between 25 KH_z and 270 KH_z; and

the data signals in the receive frequency band have a frequency approximately between 270 KH_z and 1 MH_z.

30. (Original) The method of Claim 27, wherein the resistive circuit comprises a H-pad attenuator.

31. (Cancelled)

32. (Cancelled)

33. (Original) The method of Claim 27, further comprising: attenuating the first data signals in the transmit frequency band and the second data signals in the receive frequency band with one of a plurality of resistive circuits, each of the resistive circuits operable to model a different length of twisted pair line between the subscriber premises and the remote location.

34. (Original) The method of Claim 27, further comprising:

attenuating the first data signals in the transmit frequency band and the second data signals in the receive frequency band with one of a plurality of resistive circuits, each of the resistive circuits operable to model a different length of twisted pair line between the subscriber premises and the remote location; and

selecting the resistive circuit based on a signal strength of a data signal in the transmit frequency band of a data signal in the receive frequency band, the signal strength measured by a processor located in the xDSL modem.

35.- 39. (Cancelled)